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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,692	04/08/2004	Robert L. Heimann	EL021RH-3	8536
7590	06/28/2007	MICHAEL K. BOYER ORSCHELN MANAGEMENT CO 2000 US HWY 63 SOUTH MOBERLY, MO 65270	EXAMINER LAVILLA, MICHAEL E	
			ART UNIT 1775	PAPER NUMBER
			MAIL DATE 06/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/820,692	HEIMANN ET AL.	
Examiner	Art Unit		
Michael La Villa	1775		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1)  Responsive to communication(s) filed on 21 August 2006.

2a)  This action is **FINAL**.                  2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

- 4)  Claim(s) 1-24 is/are pending in the application.  
    4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-16 and 18-24 is/are rejected.

7)  Claim(s) 17 is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## **Application Papers**

- 9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 08 April 2004 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20060821.

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_ .  
5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_\_ .

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 August 2006 has been entered.

### ***Claim Objections***

2. Claim 20 is objected to because of the following informalities: Regarding Claim 20, penultimate line, a comma or semicolon is needed at the end of the line. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:
4. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. Claims 11 and 20-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is remarked that applicant has not indicated support for these newly presented

claims in applicant's remarks. For the reasons already set forth in the Office Action mailed on 29 December 2005, it is unclear where applicant teaches the claimed method as applied to a substrate, as opposed to the electrically conductive surface of a substrate. It is unclear how the originally filed Specification teaches contacting with first medium and then with second medium of the claimed compositions and in the claimed sequence. With respect to Claims 11, 20, and 21, it is unclear how the claimed subject matter, relating to chromated surfaces generally and as specifically claimed in Claims 20 and 21, is taught by the cited portion on page 3, lines 15-21. The cited portion teaches "enhancement" and does not refer to performing the claimed method on a chromated surface. Hence, it is unclear what is the basis for interpreting this language to provide support for the claims as now presented. The claim language appears to mean that chromate ingredients could be included in the silicate medium.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
7. A person shall be entitled to a patent unless –
8. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
9. Claims 3 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshimura et al. USPN 4,466,832. Yoshimura et al. teaches contacting a surface with a basic medium comprised of silica and metal silicate, drying the

surface, and contacting with tape. See Yoshimura et al. (col. 2, line 41 through col. 3, line 18; col. 4, line 41 through col. 5, line 35; and col. 6, lines 46-57).

10. Claims 3, 12, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano et al. USPN 3,977,888. Sano et al. teaches contacting a surface with a basic medium comprised of silica and metal silicate, drying the surface, and applying a hardener layer. See Sano et al. (Abstract ; col. 3, line 37 through col. 5, line 17; col. 6, lines 15-53; and col. 8, line 31 through col. 9, line 55).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 1, 5, 6, 9, 13-16, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over van Ooij et al. USPN 5,108,793. van Ooij et al. teaches coating a metal substrate with an alkaline metal silicate solution having metal

salt, wherein the claimed pH is obtained and wherein the resulting mineral layer is further coated with silane coating. See van Ooij et al. (Abstract; col. 2, line 55 through col. 5, line 58). Van Ooij et al. does not exemplify the claimed sodium silicate concentration, but suggests a range of concentrations which includes claimed concentrations. It would have been obvious to one of ordinary skill in the art at the time of the invention to formulate the solution of van Ooij et al. with greater amounts of sodium silicate than those exemplified, including amounts claimed, as van Ooij et al. teaches that thicker coatings may be obtained by using more concentrated solutions. Van Ooij et al. teaches drying the sheet after applying the silicate layer and before applying the silane coating. With respect to Claim 6, painting following silane treatment is suggested. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply a conventional paint layer to the silane treated coating, such as polyester or epoxy based paints.

14. Claims 1, 5, 8, 9, 13-16, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sabata et al. USPN 5,478,655. Sabata et al. teaches coating a metal substrate with an alkaline metal silicate solution having metal salt, wherein the claimed pH is obtained and wherein the resulting mineral layer contains silane and is provided with an epoxy or polyester paint coating. See Sabata et al. (Abstract; col. 1, line 55 through col. 3, line 60; col. 4, line 19 through col. 5, line 46; col. 6, line 63 through col. 7, line 6). Sabata et al. does not exemplify the claimed sodium silicate concentration, but suggests a range of

concentrations which includes claimed concentrations. It would have been obvious to one of ordinary skill in the art at the time of the invention to formulate the solution of Sabata et al. with greater amounts of sodium silicate than those exemplified, including amounts claimed, as Sabata et al. teaches that thicker coatings may be obtained by using more concentrated solutions. Sabata et al. teaches drying the sheet after applying the silicate layer and before applying the silane coating.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. USPN 4,466,832. Yoshimura et al. teaches contacting a surface with an alkaline medium comprised of silica, metal silicate, drying the surface, and contacting with tape. See Yoshimura et al. (col. 2, line 41 through col. 3, line 18; col. 4, line 41 through col. 5, line 35; and col. 6, lines 46-57). Yoshimura et al. may not exemplify the claimed particle size, but teaches that average particle size may be about 75 nm. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize particles with average size of about 75 nm. It would be expected that some of these particles would have a size of about 50 nm, as claimed in Claim 4.

16. Claims 1-3, 5-7, 10-12, 18-21, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. USPN 3,977,888 in view of van Ooij et al. USPN 5,759,629. Sano et al. teaches contacting a surface with a basic medium comprised of silica and metal silicate, drying the surface, and applying a hardener layer. See Sano et al. (Abstract ; col. 3, line 37 through col. 5, line 17;

col. 6, lines 15-53; and col. 8, line 31 through col. 9, line 55). Sano et al. does not explicitly teach a further coating layer of the claimed materials. Van Ooij et al. teaches applying further polymer protective layers to a silicate coated substrate, wherein the polymers are of the claimed variety. See van Ooij et al. (col. 3, lines 44-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply a polymeric protective coating to the laminate of Sano et al. in order to confer additional protection to the laminate of Sano et al. Sano et al. may not exemplify the claimed amounts of silicate in combination with other claimed limitations. It would have been obvious to one of ordinary skill in the art at the time of the invention to use formulations in the claimed range since Sano et al. suggests that formulations in that range are effective. Sano et al teaches using polymeric silicate. Sano teaches cobalt colorant dopant. With respect to Claim 6, Sano suggests that rinsing with sulphates is effective after drying. It would have been obvious to one of ordinary skill in the art at the time of the invention to rinse with sulfates after drying as Sano suggests this is effective treatment. With respect to Claim 23, Sano et al. teaches using transition metal salts in the rinse solution. It would have been obvious to one of ordinary skill in the art at the time of the invention to use any transition metal, including those claimed, since Sano et al. teaches they are effective. With respect to Claim 11, Sano teaches that steel substrates are suitable. It would have been obvious to one of ordinary skill in the art at the time of the invention to use any conventional steel substrate, including conversion coated chromate steel substrate, since

Sano et al. suggests that conventional steel substrate is effective. With respect to Claim 24, Sano teaches that steel substrates are suitable. It would have been obvious to one of ordinary skill in the art at the time of the invention to use any conventional steel substrate, including galvanized steel substrate, since Sano et al. suggests that conventional steel substrate is effective.

***Response to Amendment***

17. In view of applicant's amendments and arguments, applicant traverses the section 112, first paragraph rejection of the Office Action mailed on 29 December 2005. Rejections are withdrawn except to the extent that they are repeated above for the reasons given above.

***Allowable Subject Matter***

18. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael La Villa whose telephone number is (571) 272-1539. The examiner can normally be reached on Monday through Friday.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael La Villa  
23 June 2007

  
MICHAEL E. LAVILLA PH.D.  
PRIMARY EXAMINER